

CLAIMS

1 A reproducing apparatus for a record medium,
the reproducing apparatus comprising:

5 a head portion for scanning a record medium
on which data of a content has been recorded, at least
management information and additional information being
embedded to the data of the content, the management
information being with respect to a copy management,
the additional information containing at least one of
10 error detection code and error correction code added to
the management information;

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15 a demodulation processing portion for
performing a demodulating portion for data that that
has been read from the record medium by said header
portion;

a detecting circuit portion for detecting the
additional information from an output signal of said
demodulation processing portion; and

20 a determining circuit portion for performing
an error detecting process for a detected result
supplied from said detecting circuit portion
corresponding to the error detection code contained in
the additional information detected by said detecting
circuit portion and controlling an output operation for
25 an output signal of said demodulation processing
portion for the data of the content that has been read
from the record medium corresponding to the management

information when no error takes place in the error detecting process.

2. The reproducing apparatus for the record medium as set forth in claim 1,

5 wherein said determining circuit portion rewrites the management information and adding one of the error detection code and the error correction code to the rewritten management information as it is when said determining circuit portion outputs an output
10 signal of said demodulation processing portion.

3. The reproducing apparatus for the record medium as set forth in claim 2, further comprising:

a rewriting portion, controlled by said determining circuit portion, for rewriting the
15 management information contained in the output signal of said demodulation processing portion.

4. The reproducing apparatus for the record medium as set forth in claim 3,

20 wherein said rewriting portion comprises:
a generating portion for generating new management information corresponding to a control signal supplied from said determining circuit portion;
and

25 an adding circuit portion for adding the management information newly generated by said generating portion to an output signal of said demodulation processing portion.

5. The reproducing apparatus for the record medium as set forth in claim 3,

wherein said determining circuit portion permits the output signal of said demodulation processing portion to be output and causes said rewriting portion to rewrite the management information when the management information permits the data of the content that has been read from the record medium to be copied.

6. The reproducing apparatus for the record medium as set forth in claim 5,

wherein said determining circuit portion causes said rewriting portion to rewrite the management information so that the management information prohibits the data of the content that has been read from the record medium from being copied.

7. The reproducing apparatus for the record medium as set forth in claim 3,

wherein said determining circuit portion prohibits the output signal of said demodulation processing portion from being output when the management information prohibits the data of the content that has been read from the record medium from being copied.

8. The reproducing apparatus for the record medium as set forth in claim 1,

wherein when said determining circuit portion

detects that an error takes place corresponding to one of the error detection code and the error correction code, said determining circuit portion stops the operation.

5 9. The reproducing apparatus for the record medium as set forth in claim 1,

 wherein said determining circuit portion calculates a syndrome corresponding to the error detection code and determines whether or not an error
10 takes place depending on whether the calculated syndrome is a predetermined value.

10. The reproducing apparatus for the record medium as set forth in claim 1,

 wherein said determining circuit portion
15 calculates a syndrome corresponding to one of the error detection code and the error correction code and determines whether an error takes place depending on whether or not the calculated syndrome is a
20 predetermined value and corresponding to the management information.

11. The reproducing apparatus for the record medium as set forth in claim 10,

 wherein said determining circuit portion determines that no error takes place when the
25 calculated syndrome is zero and the management information permits the data of the content to be copied.

12. The reproducing apparatus for the record medium as set forth in claim 10,

wherein said determining circuit portion determines that no error takes place when the
5 calculated syndrome is a predetermined value and the management information prohibits the data of the content from being copied.

13. The reproducing apparatus for the record medium as set forth in claim 10,

10 wherein said determining circuit portion determines that an error takes place when the calculated syndrome is a predetermined value and the management information permits the data of the content to be copied.

14. The reproducing apparatus for the record medium as set forth in claim 10,

15 wherein said determining circuit portion determines that no error takes place when the calculated syndrome is zero and the management
20 information represents that the record medium is an original record medium.

15. The reproducing apparatus for the record medium as set forth in claim 10,

25 wherein said determining circuit portion determines that no error takes place when the calculated syndrome is a predetermined value and the management information represents that the record

medium is a non-original record medium.

16. The reproducing apparatus for the record medium as set forth in claim 10,

wherein said determining circuit portion
5 determines that an error takes place when the calculated syndrome is a predetermined value and the management information represents that the record medium is an original record medium.

17. A reproducing method for a record medium, the
10 reproducing method comprising the steps of:

performing a demodulating process for data
that has been read from a record medium on which data
of a content has been recorded, at least management
information and additional information being embedded
15 to the data of the content, the management information being with respect to a copy management, the additional information containing at least one of error detection code and error correction code added to the management information;

20 detecting the additional information from an output signal of which the demodulation process has been performed;

performing an error detecting process
corresponding to one of the error detection code and
25 the error correction code of the detected additional information; and

controlling an output operation for an output

signal of which the demodulating process has been performed for the data of the content that has been read from the record medium corresponding to the management information when no error takes place in the error detecting process.

18. The reproducing method for the record medium as set forth in claim 17,

wherein the controlling step is performed by rewriting the management information and adding one of the error detection code and the error correction code to the rewritten management information as it is when an output signal of which the demodulating process has been performed.

19. The reproducing method for the record medium as set forth in claim 18, further comprising the step of:

permitting the output signal of which the demodulating process has been performed to be output and rewriting the management information when the management information permits the data of the content that has been read from the record medium to be copied.

20. The reproducing method for the record medium as set forth in claim 18,

wherein the rewriting step is performed so that the management information prohibits the data of the content that has been read from the record medium from being copied.

21. The reproducing method for the record medium as set forth in claim 19, further comprising the step of:

5 prohibiting the output signal of which the demodulating process has been performed from being output when the management information prohibits the data of the content that has been read from the record medium from being copied.

22. The reproducing method for the record medium as set forth in claim 17, further comprising the step of:

10 when it is detected that an error takes place corresponding to one of the error detection code and the error correction code, stopping the operation.

23. The reproducing method for the record medium as set forth in claim 17, further comprising the step of:

15 calculating a syndrome corresponding to one of the error detection code and the error correction code and determining whether or not an error takes place depending on whether or not the calculated syndrome is a predetermined value.

24. The reproducing method for the record medium as set forth in claim 17, further comprising the step of:

25 calculating a syndrome corresponding to one of the error detection code and the error correction

code and determining whether or not an error takes place depending on whether or not the calculated syndrome is a predetermined value and corresponding to the management information.

5 25. The reproducing method for the record medium as set forth in claim 24,

wherein when the calculated syndrome is zero and when the management information permits the data of the content to be copied, the result of the determining step represents that no error takes place.

10 26. The reproducing method for the record medium as set forth in claim 24,

wherein when the calculated syndrome is a predetermined value and the management information prohibits the data of the content from being copied, the result of the determining step represents that no error takes place.

15 27. The reproducing method for the record medium as set forth in claim 24,

20 wherein when the calculated syndrome is a predetermined value and when the management information permits the data of the content to be copied, the result of the determining step represents that an error takes place.

25 28. The reproducing method for the record medium as set forth in claim 24,

wherein when the calculated syndrome is zero

and when the management information represents that the record medium is an original record medium, the result of the determining step represents that no error takes place.

5 29. The reproducing method for the record medium as set forth in claim 24,

wherein when the calculated syndrome is a predetermined value and when the management information represents that the record medium is a non-original record medium, the result of the determining step represents that no error takes place.

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30. The reproducing method for the record medium as set forth in claim 16,

wherein when the calculated syndrome is a predetermined value and when the management information represents that the record medium is an original record medium, the result of the determining step represents that an error takes place.

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31. A data output controlling method, comprising the steps of:

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detecting additional information from data of a content, at least management information and additional information being embedded to the data of the content, the management information being with respect to a copy management, the additional information containing at least one of error detection code and error correction code added to the management

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information;

performing an error detecting process
corresponding to one of the error detection code and
the error correction code of the detected additional
5 information; and

controlling an output operation for the data
of the content corresponding to the management
information when no error takes place in the error
detecting process.

10 32. The data output controlling method as set
forth in claim 31,

wherein the controlling step is performed by
rewriting the management information and adding one of
the error detection code and the error correction code
15 to the rewritten management information as it is when
the data of the content is output.

33. The data output controlling method as set
forth in claim 31, further comprising the step of:

20 when it is detected that an error takes place
corresponding to one of the error detection code and
the error correction code, stopping the operation.

34. The data output controlling method as set
forth in claim 31, further comprising the step of:

25 calculating a syndrome corresponding to one
of the error detection code and the error correction
code and determining whether or not an error takes
place depending on whether or not the calculated

syndrome is a predetermined value.

35. The data output controlling method as set forth in claim 31, further comprising the step of:

calculating a syndrome corresponding to one of the error detection code and the error correction code and determining whether or not an error takes place depending on whether or not the calculated syndrome is a predetermined value and corresponding to the management information.

36. The data output controlling method as set forth in claim 35,

wherein when the calculated syndrome is zero and when the management information permits the data of the content to be copied, the result of the determining step represents that no error takes place.

37. The data output controlling method as set forth in claim 35,

wherein when the calculated syndrome is a predetermined value and when the management information prohibits the data of the content from being copied, the result of the determining step represents that no error takes place.

38. The data output controlling method as set forth in claim 35,

wherein when the calculated syndrome is a predetermined value and when the management information permits the data of the content to be copied, the

result of the determining step represents that an error takes place.

39. The data output controlling method as set forth in claim 35,

5 wherein when the calculated syndrome is zero and when the management information represents an original record medium, the result of the determining step represents that no error takes place.

40. The data output controlling method as set forth in claim 35,

10 wherein when the calculated syndrome is a predetermined value and when the management information represents a non-original record medium, the result of the determining step represents that no error takes place.

41. The data output controlling method as set forth in claim 35,

15 wherein when the calculated syndrome is a predetermined value and when the management information represents an original record medium, the result of the determining step represents that an error takes place.

42. A data outputting method, comprising the steps of:

25 when at least management information and additional information are embedded to data of a content and then output, the management information being with respect to a copy management, the additional

information containing at least one of error detection code and error correction code added to the management information, rewriting the management information, adding one of the error detection code and the error correction code as it is to the rewritten management information, and outputting the resultant data.

43. An error detecting method, comprising the steps of:

pre-obtaining a syndrome in the case that at least a part of data to which at least one of error detection code and error correction code has been added has been rewritten corresponding to at least one of the error detection code and the error correction code;

obtaining a syndrome corresponding to one of the error detection code and the error correction code when the data is reproduced; and

detecting whether or not an error takes place corresponding to the obtained syndrome and the pre-obtained syndrome.

44. The error detecting method as set forth in claim 43,

wherein the detecting step is performed depending on whether or not the obtained syndrome is zero or whether or not the obtained syndrome matches the pre-obtained syndrome.

45. The error detecting method as set forth in claim 44,

wherein when the obtained syndrome is zero or the obtained syndrome matches the pre-obtained syndrome, the result of the detecting step represents that no error takes place.

5 46. The error detecting method as set forth in claim 44,

wherein when the obtained syndrome is zero or when the obtained syndrome does not match the pre-obtained syndrome, the result of the detecting step represents that an error takes place.

10 47. The error detecting method as set forth in claim 43,

wherein the detecting step is performed corresponding to the data, the pre-obtained syndrome, and the obtained syndrome.

15 48. The error detecting method as set forth in claim 43,

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20 wherein when a part of the data is rewritten, the detecting step is performed corresponding to the rewritten portion of the data, the pre-obtained syndrome, and the obtained syndrome.

49. A data outputting and reproducing method, comprising the steps of:

25 when at least a part of data to which one of error detection code and error correction code has been added is rewritten, adding at least one of the error detection code and the error correction code to the

data and outputs the resultant data;

pre-obtaining a syndrome in the case that at least a part of the data is rewritten;

when the data is reproduced, obtaining a syndrome corresponding to one of the error detection code and the error correction code; and

detecting whether or not an error takes place corresponding to the obtained syndrome and the pre-obtained syndrome.

50. The data outputting and reproducing method as set forth in claim 49,

wherein the detecting step is performed depending on whether or not the obtained syndrome is zero or whether or not the obtained syndrome matches the pre-obtained syndrome.

51. The data outputting and reproducing method as set forth in claim 50,

wherein when the obtained syndrome is zero or the obtained syndrome matches the pre-obtained syndrome, the result of the detecting step represents that no error takes place.

52. The data outputting and reproducing method as set forth in claim 50,

wherein when the obtained syndrome is zero or when the obtained syndrome does not match the pre-obtained syndrome, the result of the detecting step represents that an error takes place.

53. The data outputting and reproducing method as set forth in claim 49,

wherein the detecting step is performed corresponding to the data, the pre-obtained syndrome, and the obtained syndrome.

54. The data outputting and reproducing method as set forth in claim 49,

wherein when a part of the data is rewritten, the detecting step is performed corresponding to the rewritten portion of the data, the pre-obtained syndrome, and the obtained syndrome.

55. The data outputting and reproducing method as set forth in claim 49,

wherein when the result of the detecting step represents that an error takes place, at least data is prohibited from being re-output.

56. The data outputting and reproducing method as set forth in claim 49,

wherein when the result of the detecting step represents that no error takes place, at least the data is permitted to be re-output.